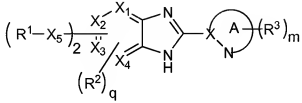
Amendments To The Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-26 (Cancelled)

Claim 27 (New) A compound of a formula (I-0):



(I-1)

or a pharmaceutically acceptable salt thereof, wherein:

X represents a carbon atom or a nitrogen atom;

X_1, X_2, X_3 and X_4 each independently represent a carbon atom;

one X_5 represents a member selected from the group consisting of O, S, S(O) and SO_2 and the other X_5 represents a direct bond;

ring A represents a member selected from the group consisting of thiazolyl, imidazolyl, isothiazolyl, triazolyl, oxazolyl, oxadiazolyl, pyrazinyl, pyridyl, pyrazolyl and pyrimidinyl;

each R^1 represents an aryl group, or 5-6 membered N containing heteroaryl group, having 1-4 total heteroatoms, selected from N, O and S, said heteroaryl group being optionally fused to a second aromatic ring which is an aryl or heteroaryl ring, and

the other R^1 represents an aliphatic ring, or a heterocyclic mono or bicyclic heterocyclic non-aromatic group having 4-10 atoms and 1-4 heteroatoms selected from O, S and N, said R^1 being optionally substituted with 1-3 R^4 groups;

each R^2 independently represents hydroxy, formyl, $-CH_{3-a}F_a$, $-OCH_{3-a}F_a$, NH_2, CN, halo, C_{1-6} alkyl or $-(CH_2)_{1-4}OH$;

each R^3 independently represents a member selected from the group consisting of:

$-C_{1-6}$ alkyl, $-(CH_2)_{1-6}-OH$, $-C(O)-OC_{1-6}$ alkyl, $-(CH_2)_{1-6}-OC_{1-6}$ alkyl, $-(CH_2)_{1-6}-NH_2$, CN, $-C(O)-C_{1-6}$ alkyl, halo, $-C_{2-6}$ alkenyl, $-OC_{1-6}$ alkyl, -COOH, -OH or an oxo group;

each R^4 independently represents a member selected from the group consisting of:
$-C_{1-6}$ alkyl and the alkyl may be substituted with the same or different, from 1 to 3 hydroxyl groups, halo atoms or $-OC(O)-C_{1-6}$ alkyl groups, the alkyl portion thereof being optionally substituted with from 1 to 3 halo atoms or $-OC_{1-6}$ alkyl groups;
$-C_{3-7}$ cycloalkyl;
$-C_{2-6}$ alkenyl;
$-C(O)-N(R^{51})R^{52}$;
$-S(O)_2-N(R^{51})R^{52}$;
$-O-C_{1-6}$ alkyl and the C_{1-6} alkyl may be substituted with a halogen or $N(R^{51})R^{52}$;
$-S(O)_{0-2}-C_{1-6}$ alkyl;
$-C(O)-C_{1-6}$ alkyl and the C_{1-6} alkyl may be substituted with a halo atom, amino group, CN, hydroxy group, $-O-C_{1-6}$ alkyl, $-CH_{3-a}F_a$, $-OC(O)-C_{1-6}$ alkyl, $-N(C_{1-6}$ alkyl$)C(O)O-C_{1-6}$ alkyl, $-NH-C(O)O-C_{1-6}$ alkyl, phenyl, $-N(R^{51})R^{52}$, $-NH-C(O)-C_{1-6}$ alkyl, $-N(C_{1-6}$ alkyl$)-C(O)-C_{1-6}$ alkyl or $-NH-S(O)_{0-2}-C_{1-6}$ alkyl;
$-C(S)-C_{3-7}$ cycloalkyl;
$-C(S)-C_{1-6}$ alkyl;
$-C(O)-O-C_{1-6}$ alkyl;
$-(CH_2)_{0-4}-N(R^{53})-C(O)-R^{54}$;
$-N(R^{53})-C(O)-O-R^{54}$;
-C(O)-aryl optionally substituted with a halogen;
-C(O)-aromatic hetero ring;
-C(O)-aliphatic hetero ring;
a hetero ring optionally substituted with a halo atom or $-OC_{1-6}$ alkyl group, which is optionally substituted with a halo atom or an $-O-C_{1-6}$ alkyl group; and

a phenyl ring optionally substituted with a halo atom, -C_{1-6} alkyl or -O-C_{1-6} alkyl, the alkyl portions of which are optionally substituted with a halogen, CN, formyl, COOH, NH_2, oxo, hydroxy, hydroxyamidino or nitro group;

each R^{51} and R^{52} independently represents a hydrogen atom or -C_{1-6} alkyl; or taken together with the nitrogen atom to which they are attached, R^{51} and R^{52} together form a 4- to 7-membered hetero ring;

each R^{53} represents a hydrogen atom or a -C_{1-6} alkyl group;

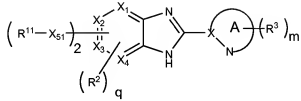
each R^{54} represents -C_{1-6} alkyl, or when R^{53} and R^{54} each represent alkyl groups, R^{53}, R^{54} and -N-C(O)- together form a 4- to 7-membered nitrogen-containing aliphatic hetero ring, or R^{53}, R^{54} and -N-C(O)-O- together form a 4- to 7-membered nitrogen-containing aliphatic hetero ring and the aliphatic hetero ring may be substituted with an oxo, or the aliphatic hetero ring may have 1 or 2 double bonds in the ring;

a represents an integer selected from 1, 2 and 3;

q indicates an integer of from 0 to 2; and

m indicates an integer of from 0 to 2.

Claim 28 (New) A compound as claimed in 27, which is represented by a formula (I-1):



(I-1)

or a pharmaceutically acceptable salt thereof, wherein:

one R^{11} represents phenyl optionally substituted with from 1 to 3 R^4 groups or a 5- or 6-membered nitrogen-containing aromatic hetero ring having from 1 to 4 hetero atoms selected from a group

consisting of a nitrogen atom, a sulfur atom and an oxygen atom and the nitrogen-containing aromatic hetero ring may be substituted with from 1 to 3 R^4 groups, and

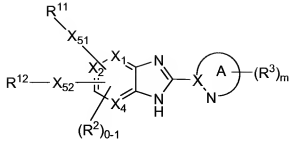
the other R^{11} group represents an aliphatic or heterocyclic non-aromatic ring containing 5-6 total atoms, one of which is N, with up to 3 additional nitrogen atoms, and 0-1 O or S atom, or a 9-10 membered non-aromatic bicyclic heterocycle containing 1-4 heteroatoms, at least one of which is an N atom, up to 3 additional N atoms, and 0-1 O or S atom,
said R^{11} groups being optionally substituted with 1-3 R^4 groups;
and one X_{51} represents -O-, -S-, -S(O)- or -$S(O)_2$-, and the other represents a bond.

Claim 29 (New) A compound in accordance with claim 28, or a pharmaceutically acceptable salt thereof, wherein both R^{11} groups represent phenyl optionally substituted with from 1 to 3 R^4 groups.

Claim 30 (New) A compound in accordance with claim 28, or a pharmaceutically acceptable salt thereof, wherein both R^{11} groups represent a 5- or 6-membered nitrogen-containing aromatic hetero rings having from 1 to 4 hetero atoms selected from a group consisting of a nitrogen atom, a sulfur atom and an oxygen atom and the nitrogen-containing aromatic hetero ring may be substituted with from 1 to 3 R^4 groups.

Claim 31 (New) A compound in accordance with claim 28, or a pharmaceutically acceptable salt thereof, wherein one R^{11} represents a phenyl ring optionally substituted with from 1 to 3 R^4 groups, and the other R^{11} represents a 5- or 6-membered nitrogen-containing aromatic hetero ring having from 1 to 4 hetero atoms selected from a group consisting of a nitrogen atom, a sulfur atom and an oxygen atom, and the 5-6 membered nitrogen-containing aromatic hetero ring may be substituted with from 1 to 3 R^4 groups.

Claim 32 (New) A compound represented by a formula (I-2):



(I-2)

or a pharmaceutically acceptable salt thereof, wherein:

X^1, X^2 and X^4 represent carbon atoms;

ring A represents a member selected from the group consisting of:
thiazolyl, imidazolyl, isothiazolyl, thiadiazolyl, triazolyl, pyrazinyl, pyridyl, pyridazinyl, pyrazolyl and pyrimidinyl;

R^{11} represents phenyl optionally substituted with from 1 to 3 R^4 groups, or represents a 5- or 6-membered nitrogen-containing aromatic hetero ring having from 1 to 4 hetero atoms selected from the group consisting of nitrogen, sulfur and oxygen, and said group being optionally substituted with from 1 to 3 R^4 groups;

R^{12} represents a non-aromatic 4- to 7-membered nitrogen-containing hetero ring having, as the hetero atom constituting the heterocyclic ring, at least one nitrogen atom and optionally having, as the other hetero atoms, from 1 to 4 hetero atoms selected from a group consisting of nitrogen, sulfur, and oxygen, said ring being optionally substituted with from 1 to 3 R^4 groups, and when the hetero ring is an aliphatic hetero ring, then it may have 1 or 2 double bonds;

one of X_{51} and X_{52} represents -O-, -S-, -S(O)- or -$S(O)_2$-, and the other represents a direct bond;

if present, R^2 represents a member selected from the group consisting of: OH; formyl, $-CH_{3-a}F_a$, $-OCH_{3-a}F_a$, NH_2, CN, halo, C_{1-6} alkyl and $(CH_2)_{1-4}$ OH;

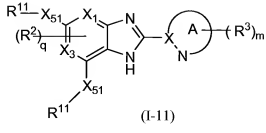
m is 0, 1 or 2 and

when present, each R^3 is independently selected from the group consisting of: $-C_{1-6}$ alkyl, $-(CH_2)_{1-6}-OH$, $-C(O)-OC_{1-6}$ alkyl, $-(CH_2)_{1-6}-OC_{1-6}$ alkyl, $-(CH_2)_{1-6}-NH_2$, CN, $-C(O)-C_{1-6}$ alkyl, halo, $-C_{2-6}$ alkenyl, $-OC_{1-6}$ alkyl, -COOH, -OH and oxo.

Claim 33 (New) A compound in accordance with claim 32, or a pharmaceutically acceptable salt thereof, wherein R^{12} represents a 4- to 7-membered saturated nitrogen-containing aliphatic hetero ring having one nitrogen atom and optionally having 1 or 2 hetero atoms selected from a group consisting of nitrogen, sulfur and oxygen, said heterocyclic ring being optionally substituted with from 1 to 3 R^4 groups, and X_{52} is a single bond; or R^{12} represents a 5- to 7-membered nitrogen-containing aliphatic hetero ring having, as the atom constituting the hetero ring, at least one nitrogen atom and optionally having, as the other hetero atoms, 1 or 2 hetero atoms selected from a group consisting of nitrogen, sulfur and oxygen, and optionally having in the ring, 1 or 2 double bonds, said 5- to 7-membered hetero ring being optionally substituted with from 1 to 3 R^4 groups.

Claim 34 (New) A compound in accordance with claim 32, or a pharmaceutically acceptable salt thereof, wherein R^{12} represents a 5- to 7-membered nitrogen-containing aliphatic hetero ring having, as the atom constituting the hetero ring, at least one nitrogen atom and optionally having, as other hetero atoms, 1 or 2 hetero atoms selected from a group consisting of nitrogen, sulfur and oxygen and having, in the ring, 1 or 2 double bonds and the 5- to 7-membered hetero ring may be substituted with from 1 to 3 R^4 groups.

Claim 35 (New) A compound represented by formula (I-11), or a pharmaceutically acceptable salt thereof:



(I-11)

wherein:
X_1 and X_3 represent carbon atoms;

X represents a carbon or nitrogen atom;

ring A represents a member selected from the group consisting of thiazolyl, imidazolyl, isothiazolyl, triazolyl, oxazolyl, oxadiazolyl, pyrazinyl, pyridyl, pyrazolyl and pyrimidinyl;

one X_{51} represents -O-, -S-, -S(O)- or -$S(O)_2$- and the other represents a direct bond;

q represents 0, 1 or 2;

each R^2 independently represents a member selected from the group consisting of: hydroxy, formyl, -$CH_{3-a}F_a$, -$OCH_{3-a}F_a$, NH_2, CN, halo, C_{1-6} alkyl and -$(CH_2)_{1-4}$OH;

R^{11} represents a phenyl optionally substituted with from 1 to 3 R^4s, or represents a 5- or 6-membered nitrogen-containing aromatic hetero ring having from 1 to 4 hetero atoms selected from a group consisting of a nitrogen atom, a sulfur atom and an oxygen atom and the nitrogen-containing aromatic hetero ring optionally substituted with from 1 to 3 R^4 groups;

m represents 0, 1 or 2, and;

each R^3 represents a member selected from the group consisting of: -C_{1-6} alkyl, -$(CH_2)_{1-6}$-OH, -C(O)-OC_{1-6} alkyl, -$(CH_2)_{1-6}$-OC_{1-6} alkyl, -$(CH_2)_{1-6}$-NH_2, CN, -C(O)-C_{1-6} alkyl, halo, -C_{2-6} alkenyl, -OC_{1-6} alkyl, -COOH, -OH and oxo.

Claim 36 (New) A compound of formula (I-0) which is selected from the following group consisting of:
1-(2-(6-(5-bromo-pyridin-2-yloxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-ethanone,
1-(2-(6-(6-methanesulfonyl-pyridin-3-yloxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-ethanone,

1-(2-(6-(4-hydroxymethyl-phenoxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-ethanone,
1-(2-(6-(4-methanesulfonyl-phenoxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-ethanone,
2-(6-(4-methanesulfonyl-phenoxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)-pyrrolidine-1-carboxamide,
2-hydroxy-1-(2-(6-(4-methanesulfonyl-1-phenoxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-ethanone,
1-(2-(6-(6-ethanesulfonyl-pyridin-3-yloxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-ethanone,
1-(2-(6-(4-methanesulfonyl-phenoxy)-2-pyrazin-2-yl-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-ethanone,
2-fluoro-1-(2-(6-(4-methanesulfonyl-phenoxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-ethanone,
5-(6-(1-acetyl-pyrrolidin-2-yl)-2-pyridin-2-yl-1H-benzimidazole-5-yloxy)pyridine-2-carbonitrile,
1-(2-(6-(4-methanesulfonyl-phenoxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-2-methylamino-ethanone,
1-(2-(6-(4-methanesulfonyl-phenoxy)-2-(1H-pyrazol-3-yl)-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-ethanone,
1-(4-fluoro-2-(6-(4-methanesulfonyl-phenoxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-ethanone,
N-(5-(6-(1-acetyl-pyrrolidin-2-yl)-2-pyridin-2-yl-1H-benzimidazol-5-yloxy)-pyridin-2-yl)-acetamide,
1-(2-(2-(5-bromo-pyridin-2-yl)-6-(4-methanesulfonyl-phenoxy)-3H-benzimidazol-5-yl)-pyrrolidin-1-yl)-ethanone,
N-(2-(2-(6-(4-methanesulfonyl-phenoxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)pyrrolidin-1-yl)-2-oxo-ethyl)-acetamide,
6-(1-acetylpyrrolidin-2-yl)-5-(4-(methoxymethyl)phenoxy)-2-pyridin-2-yl-1H-benzimidazol monotrifluoroacetate,
1-(4-((6-(1-acetylpyrrolidin-2-yl)-2-pyridin-2-yl-1H-benzimidazol-5-yl)oxy)phenyl)pyridin-2(1H)-one,
6-(1-acetylpyrrolidin-2-yl)-5-((6-(5-methyl-[1,2,4]-oxadiazol-3-yl)pyridin-3-yl)oxy)-2-pyridin-2-yl-1H-benzimidazole,

(2-(2-(5-((2'-fluorobiphenyl-4-yl)oxy)-2-pyridin-2-yl-1H-benzimidazol-6-yl)pyrrolidin-1-yl)-2-oxoethyl)methylamine,
6-(1-acetylpyrrolidin-2-yl)-5-((6-([1,2,4]-oxadiazol-3-yl)pyridin-3-yl)oxy)-2-pyridin-2-yl-1H-benzimidazole,
6-(1-acetylpyrrolidin-2-yl)-5-(4-(2-methyl-2H-tetrazol-5-yl)phenoxy)-2-pyrazin-2-yl-1H-benzimidazole,
5-(1-acetyl-3-fluoropyrrolidin-2-yl)-6-(4-(methanesulfonyl)phenoxy)-2-pyridin-2-yl-1H-benzimidazole,
6-(1-acetylpyrrolidin-2-yl)-5-((6-(2-methyl-2H-tetrazol-5-yl)pyridin-3-yl)oxy)-2-pyridin-2-yl-1H-benzimidazole,
6-(1-acetylpyrrolidin-2-yl)-5-(4-(2-methyl-2H-tetrazol-5-yl)phenoxy)-2-pyridin-2-yl-1H-benzimidazole,
5-(1-acetyl-5-methylpyrrolidin-2-yl)-6-(4-(methanesulfonyl)phenoxy)-2-pyridin-2-yl-1H-benzimidazole,
6-(1-acetylpyrrolidin-2-yl)-5-((6-(2-methyl-2H-tetrazol-5-yl)pyridin-3-yl)oxy)-2-pyrazin-2-yl-1H-benzimidazole,
6-(1-acetylpyrrolidin-2-yl)-5-(6-methoxymethylpyridin-3-yl)oxy)-2-pyridin-2-yl-1H-benzimidazole,
2-(2-(5-(4-(2-methyl-2H-tetrazol-5-yl)phenoxy)-2-pyridin-2-yl-1H-benzimidazol-6-yl)pyrrolidin-1-yl)-2-oxoethanol,
2-(5-(4-(2-methyl-2H-tetrazol-5-yl)phenoxy)-2-pyridin-2-yl-1H-benzimidazol-6-yl)pyrrolidine-1-carboxamide,
5'-((6-(1-acetylpyrrolidin-2-yl)-2-pyridin-2-yl-1H-benzimidazol-5-yl)oxy)-2H-1,2'-bipyridin-2-one,
3-(4-((6-(1-acetylpyrrolidin-2-yl)-2-pyridin-2-yl-1H-benzimidazol-5-yl)oxy)phenyl)-1,3-oxazolidin-2-one,
6-(1-acetylpyrrolidin-2-yl)-5-((6-methylpyridin-3-yl)oxy)-2-pyridin-2-yl-1H-benzimidazole,
6-(1-acetylpyrrolidin-2-yl)-5-((6-pyrazin-2-ylpyridin-3-yl)oxy)-2-pyridin-2-yl-1H-benzimidazole,
6-(1-acetyl-3-fluoropyrrolidin-2-yl)-5-((2'-fluorobiphenyl-4-yl)oxy)-2-pyridin-2-yl-1H-benzimidazole,
3-(4-((6-(1-acetylpyrrolidin-2-yl)-2-pyrazin-2-yl-1H-benzimidazol-5-yl)oxy)phenyl)-1,3-oxazolidine-2-one,
6-(1-acetylpyrrolidin-2-yl)-2-pyrazin-2-yl-5-((6-pyrazin-2-ylpyridin-3-yl)oxy)-1H-benzimidazole,
6-(1-acetylpyrrolidin-2-yl)-5-((6-(5-methyl-[1,2,4]-oxadiazol-3-yl)pyridin-3-yl)oxy)-2-pyrazin-2-yl-1H-benzimidazole,

1-(4-((6-(1-acetylpyrrolidin-2-yl)-2-pyrazin-2-yl-1H-benzimidazol-5-yl)oxy)phenyl)ethanone,
6-(1-acetylpyrrolidin-2-yl)-5-(4-(5-methyl-[1,2,4]-oxadiazol-3-yl)phenoxy)-2-pyrazin-2-yl-1H-benzimidazole,
6-(1-acetyl-5-methylpyrrolidin-2-yl)-5-(4-methanesulfonyl-phenoxy)-2-pyrazin-2-yl-1H-benzimidazole,
N-methyl-2-(2-(5-(4-(2-methyl-2H-tetrazol-5-yl)phenoxy)-2-pyridin-2-yl-1H-benzimidazol-6-yl)pyrrolidin-1-yl)-2-oxoethanamine,
6-(1-acetyl-5-methylpyrrolidin-2-yl)-5-((6-(methoxymethyl)pyridin-3-yl)oxy)-2-pyrazin-2-yl-1H-benzimidazole,
1-(1-(6-(4-methanesulfonyl-phenoxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)-pyrrolidin-2-yl)-ethanone,
1-(1-(6-(6-methanesulfonyl-pyridin-3-yloxy)-2-pyridin-2-yl-3H-benzimidazol-5-yl)pyrrolidin-2-yl)-ethanone,
1-(1-(6-(6-ethanesulfonyl-pyridin-3-yloxy)-2-pyrazin-2-yl-3H-benzimidazol-5-yl)pyrrolidin-2-yl)ethanone, or
1-(1-(6-(6-ethanesulfonyl-pyridin-3-yloxy)-2-pyrazin-2-yl-3H-benzimidazol-5-yl)-4-fluoro-pyrrolidin-2-yl)-ethanone, or a pharmaceutically acceptable salt thereof.

Claim 37 (New) A pharmaceutical composition comprising a compound in accordance with claim 27 in combination with a pharmaceutically acceptable carrier.

Claim 38 (New) A method of treating type 2 diabetes in a mammalian patient in need of such treatment comprising administering to the patient a compound in accordance with claim 27 in an amount that is effective to treat type 2 diabetes.

Claim 39 (New) A method of treating obesity in a mammalian patient in need of such treatment comprising administering to the patient a compound in accordance with claim 27 in an amount that is effective to treat obesity.